

CLAIMS

1. A photomultiplier tube circuit comprising a photomultiplier tube having a plurality of dynodes, charging circuitry for providing charge to the plurality of dynodes and an oscillator  
5 for providing a high voltage supply to the charging circuitry characterised in that the photomultiplier tube circuit further comprises means for sampling the voltage of at least one of the dynodes and switching means for switching the oscillator on and off with respect to the at least one dynode voltage sampled.
- 10 2. A photomultiplier tube circuit according to claim 1 wherein the switching means comprises a micro-controller.
3. A photomultiplier tube circuit according to claim 1 or 2 wherein the switching means is configured so as to determine the length of time that the oscillator is switched on.
- 15 4. A photomultiplier tube circuit according to claim 3 wherein the exposure conditions of the photomultiplier tube can be determined from the length of time that the oscillator is switched on.
5. A photomultiplier tube circuit according to any of the  
20 preceding claims wherein the charging circuitry is in the form of a Cockcroft Walton circuit.
6. A photomultiplier tube circuit according to any of the preceding claims wherein the oscillator is switched on for a set period of time at predetermined intervals and is switched off  
25 when the dynode voltage sampled reaches a predetermined voltage.
7. A radiation monitor comprising a photomultiplier tube circuit according to any of the preceding claims.
8. A method of controlling the charging of a photomultiplier tube having a plurality of dynodes using a charging means  
30 comprising the cycle of:  
  
charging the dynodes to a predetermined voltage;

switching off the charging means;

sampling at least one of the dynodes to determine its voltage;

switching on the charging means when the sampled dynode voltage drops below a predetermined voltage.

- 5 9. A method of controlling the charging of a photomultiplier tube having a plurality of dynodes using a charging means comprising the cycle of:

switching on the charging means for a predetermined maximum period of time;

- 10 during the predetermined maximum period of time sampling at least one of the dynodes to determine its voltage;

switching off the charging means when the sampled dynode voltage reaches a predetermined level or the maximum period of time is reached;

- 15 waiting for a predetermined period of time.

10. A photomultiplier tube circuit substantially as hereinbefore described with reference to figure 1.